Date: Tue, 27 Apr 93 07:34:43 PDT
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #502
To: Info-Hams

Info-Hams Digest Tue, 27 Apr 93 Volume 93 : Issue 502

Today's Topics:

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

Date: 26 Apr 93 16:53:40 GMT
From: elroy.jpl.nasa.gov!sdd.hp.com!hpscit.sc.hp.com!rkarlqu@decwrl.dec.com
Subject: AM Moulation Question
To: info-hams@ucsd.edu

u1066579@csdvax.csd.unsw.edu.au wrote:
: Hi,
:   I have a quick question about AM modulation systems. I wondered why most
: broadcast transmitters modulate the final RF stage? Are there any
: disadvantages to modulating stages ior to the final RF stage.
: Best Wishes,
: Henry.
: Email u1066579@csdvax.csd.unsw.edu.au
:

Actually, plate modulation has been obsolete for at least 25 years.
What is done in modern broadcast transmitters is to build a matched
pair of transmitters, each of which puts out half the total power.
The audio is applied to them as *phase-modulation*. The two transmitters
are summed together at the outputs in a high-power combiner hybrid
which feeds the antenna. I don't remember what the phase relationship
of the combiner is, or the phase relationship of the audio modulation, but
I know it has been in use for decades at AM radio stations. The reason
why this can work is that a narrow band phase modulation signal is
identical to an AM signal, except that the carrier is 90 degrees out
of phase in the PM case.

Rick N6RK
rkarlqu@scd.hp.com

Date: 26 Apr 93 16:38:13 GMT
From: news-mail-gateway@ucsd.edu
Subject: Daily Solar Geophysical Data Broadcast for 25 April
To: info-hams@ucsd.edu

!!BEGIN!! (1.0) S.T.D. Solar Geophysical Data Broadcast for DAY 115, 04/25/93
10.7 FLUX=124.6 90-AVG=131   SSN=124   BKI=2444 2112 BAI=013
BGND-XRAY=B3.5   FLU1=1.0E+06 FLU10=1.4E+04 PKI=3344 2232 PAI=013
  BOU-DEV=012,048,044,041,010,008,008,013   DEV-AVG=023 NT   SWF=00:000
 XRAY-MAX= C2.0   @ 1228UT   XRAY-MIN= B3.1   @ 1409UT   XRAY-AVG= B5.3
NEUTN-MAX= +001% @ 0905UT   NEUTN-MIN= -001% @ 0920UT NEUTN-AVG= -0.0%
  PCA-MAX= +0.0DB @ 0920UT   PCA-MIN= -0.1DB @ 0705UT   PCA-AVG= -0.0DB
BOUTF-MAX=55410NT @ 0605UT   BOUTF-MIN=55376NT @ 1805UT BOUTF-AVG=55393NT
GOES7-MAX=P:+136NT@ 1919UT   GOES7-MIN=N:-022NT@ 0902UT G7-AVG=+089,+041,+010
GOES6-MAX=P:+153NT@ 1758UT   GOES6-MIN=N:-102NT@ 0430UT G6-AVG=+105,-010,-050
 FLUXFCST=STD:120,120,115;SESC:120,120,115 BAI/PAI-FCST=015,010,010/015,010,010
    KFCST=2235 4322 2225 4221 27DAY-AP=018,016   27DAY-KP=4552 1323 3333 4433
 WARNINGS=*SWF
   ALERTS=
!!END-DATA!!

NOTE: The Effective Sunspot Number for 24 APR 93 was 45.6.
      The Full Kp Indices for 24 APR 93 are: 3- 2- 2o 2o   3- 3- 2- 2-

----

Date: 26 Apr 93 23:10:00 GMT
From: news-mail-gateway@ucsd.edu
Subject: FAQ request
To: info-hams@ucsd.edu

I would like to receive the FAQ for: rec.radio.amateur.misc.

Date: 26 Apr 93 23:14:45 GMT
From: news-mail-gateway@ucsd.edu
Subject: IC-22U
To: info-hams@ucsd.edu

Does anyone else in this world have a IC-22U (not the 22S, but
the 22 Uniform) and been successful in putting a PL board into
it? If so, whose board did you use, and how did you do it?
jd

Date: 26 Apr 93 22:25:18 GMT
From: news-mail-gateway@ucsd.edu
Subject: Monthly Review of Solar and Geophysical Activity for March
To: info-hams@ucsd.edu

-- MONTHLY REVIEW OF SOLAR AND GEOPHYSICAL ACTIVITY --
Summary for March 1993

Report compiled by the
Solar Terrestrial Dispatch
P.O. Box 357
Stirling, Alberta
T0K 2E0, Canada

Data Provided In-Part Courtesy of the
Space Environment Services Center, NOAA
and the
NRC / Dominion Radio Astrophysical Observatory
Penticton, British Columbia, Canada

MONTHLY ACTIVITY SUMMARY FOR MARCH 1993

We are now in month 79 of solar cycle 22 (as of March 1993). There were 364 flares (optical and x-ray) in March. This is a 15 % drop over the number of flares observed in February. Of these 364 flares, 4 were ranked as major events and 9 were categorized as minor M-class events.

A breakdown of the energetic events for the last four months follows below.

	MAR '93	FEB '93	JAN '93	DEC '92
Major	4	2	0	0
Minor M-class	9	16	2	4
Class C or smaller	351	410	163	280
Total	364	428	165	284

The monthly sunspot number for March was 107.4 as computed by the SESC. The preliminary RI international sunspot number for March was 70.5 which results in a smoothed sunspot number of 79.6 for September 1992.

The monthly 10.7 cm solar radio flux for March was 136.4 which results in a preliminary smoothed mean flux value of 133.7 for September 1992. There were numerous bursts reported this month at 2800 MHz. Consult the burst report compiled below for details.

The largest x-ray flare of March was a class M7.7/3B tenflare from Region 7440 from S07E27 at 20:49 UT. The flare was associated with a moderate Type II sweep and a Type IV sweep that lasted nearly 14 hours. A tenflare measuring 370 sfu also occurred, lasting 28 minutes. Region 7440 had shown two delta configurations prior to the eruption of this flare in the eastern trailer spots, along with a large field of bright plage and associated shear. At 720 millionths in an EKC optical configuration, this spot complex was easily the most impressive on the disk. Protons at greater than 10 MeV rose to near event-levels following this flare. A single 5-minute averaged maximum flux value of 11 pfu was observed at 07:10 UT on 07 March. If protons would have remained elevated at these levels for ten additional minutes, protons would have met event criteria. Slow decay in protons was observed over the following two to three days.

The major M7.7/3B tenflare from Region 7440 was preceded four days earlier by an M5.1/SF flare on the southeast limb from the same region at S07E81 on 02 March at 21:49 UT. Flare loops were observed during this event. Region 7440 erupted one final time at 18:15 UT on 12 March with an impressively large M7.0/3B long-duration tenflare located at W51. The event started at 16:07 UT, peaked at 18:15 UT, and reached a half-power point end time at 18:47 UT. The event was associated with moderate to strong radio bursts across the spectrum, a 1,200 sfu tenflare at 17:36 UTC, and moderate Type II and IV sweeps. Protons at greater than 100 MeV began arriving at 18:50 UT and reached a maximum of about 2 pfu at 19:55 UT. Protons at greater than 10 MeV surpassed the event threshold of 10 pfu at 20:10 UT and peaked at 44 pfu at 01:55 UT on 13 March. A polar cap disturbance was associated with this activity. PCA reached a maximum of about 0.6 dB at 22:00 UT on 12 March, which was below PCA event criteria.

Prior to this last M7.0/3B tenflare, Region 7440 showed considerable

magnetic complexity in a delta configuration with strongly sheared fields along the southern and western boundaries of the group. Shear diminished considerably on the northern end of the large spot 24 hours prior to the eruption of this flare.

Region 7448 contributed a single major class M7.3/2B flare at 22:02 UT on 11 March from N15E74. This event was associated with a strong Type II sweep, lacked a Type IV, and produced only weak radio bursts across the spectrum.

The list of minor M-class or greater flares and associated radio emissions observed during March follows:

SUMMARY OF MAJOR ENERGETIC EVENTS

Date	Begin	Max	End	Xray	Op	Region	Locn	2695 MHz	8800 MHz	15.4 GHz
02 Mar:	2038	2149	2235	M5.1	SF	7440	S07E81	180	46	150
06 Mar:	2017	2049	2114	M7.7	3B	7440	S04E29	370	150	130
11 Mar:	2152	2202	2229	M7.3	2B	7448	N15E74	51	82	78
12 Mar:	1607	1815	1847	M7.0	3B	7440	S00W51	1200	480	420

SUMMARY OF MINOR M-CLASS EVENTS

Date	Begin	Max	End	Xray	Op	Region	Locn	2695 MHz	8800 MHz	15.4 GHz
04 Mar:	1007	1020	1039	M1.0	1N	7435	N10W23			
06 Mar:	1032	1038	1052	M3.8						
11 Mar:	1514	1517	1521	M1.1	SF	7440	S04W34	56	450	380
15 Mar:	1945	2135	2226	M2.9	2F	7440	S03W88	380	170	68
20 Mar:	0011	0106	0159	M1.8	1N	7448	N18W37	45	110	67
21 Mar:	0319	0340	0406	M2.1	1N	7448	N16W47	140	91	26
23 Mar:	0117	0153	0256	M2.3	SF	7448	N18W78	310	220	87
29 Mar:	1248	1258	1303	M1.0	SF	7461	N04E36	79	100	150
30 Mar:	0058	0105	0117	M2.6	1B	7461	N04E31	250	440	220

The geomagnetic field in March was more active than February. The estimated planetary A-index for March was 21, compared with 16 in February. There were three sudden magnetic impulses observed during the month. The first occurred at 21:39 UT on 08 March and measured 50 nanoteslas (nT). The others occurred at 05:26 UT on 15 March and 01:56 UT on 23 March and measured 20 nT and 27 nT respectively.

The most disturbed day of the month was 09 March following the arrival of the sudden storm commencement noted above at 21:39 UT on 08 March. This

disturbance was the result of the major M7.7/3B tenflare of 06 March and resulted in major to severe geomagnetic storming. Heaviest hit were the high latitude regions, although middle latitude stations saw respectably large magnetic perturbations. The GOES-7 spacecraft experienced two magnetopause crossings following the SSC. The first and most significant occurred between 21:53 and 22:03 UT. The second crossing was very brief and occurred at 23:46 UT for approximately one minute.

The daily estimated planetary A-index for 09 March was 78. Severe geomagnetic storming occurred between 00:00 UT and 09:00 UT on 09 March before giving way to active geomagnetic conditions which persisted through to the end of 09 March.

Despite the full phase of the moon, strong auroral activity was sighted as far south as Hancock, Michigan during this disturbance.

RECENT SOLAR INDICES (PRELIMINARY) OF THE OBSERVED MONTHLY MEAN VALUES
Last Updated April 19, 1993

	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed		Ratio	Smooth Values		Penticton	Smooth		Smooth
	SESC	RI	RI/SESC	SESC	RI	10.7 cm	Value	Ap	Value
				YEAR = 1989					
Jan:	203.2	161.6	.80	189.2	141.9	235.4	190.2	19	16.7
Feb:	211.0	164.5	.78	196.0	144.7	222.4	194.0	15	17.0
Mar:	176.8	131.0	.74	204.1	149.4	205.1	199.7	41	17.6
Apr:	172.3	129.3	.75	209.9	153.1	189.6	204.4	23	18.2
May:	207.0	138.4	.67	216.4	156.5	190.1	209.3	16	18.8
Jun:	297.3	196.0	.66	220.1	157.9	239.6	213.1	17	19.2
Jul:	193.9	126.8	.65	221.1	158.1	181.9	212.6	8	19.1
Aug:	243.0	166.8	.69	221.5	157.4	217.1	209.7	20	19.3
Sep:	240.7	176.8	.74	221.3	156.3	225.9	207.2	17	18.8
Oct:	217.4	158.5	.73	223.2	157.1	208.7	206.3	21	18.3
Nov:	255.0	173.0	.68	223.4	157.3	235.1	206.1	19	18.4
Dec:	217.8	166.1	.76	217.3	153.3	213.0	203.3	16	18.4
				YEAR = 1990					
Jan:	239.3	177.3	.74	212.4	150.6	210.1	200.4	14	18.6
Feb:	184.7	130.5	.71	213.9	152.9	178.3	200.5	23	18.8
Mar:	198.6	140.3	.71	212.7	152.0	188.8	198.7	23	18.6
Apr:	196.1	140.3	.72	210.5	149.3	185.3	195.6	27	18.3

May:	187.7	132.2	.70	208.1	147.0	189.7	192.4	16	17.6
Jun:	168.9	105.4	.62	205.3	143.8	170.9	189.9	16	16.8
Jul:	204.3	149.4	.73	203.8	140.6	180.7	190.4	14	16.2
Aug:	269.4	200.3	.74	206.3	140.5	222.6	193.9	19	15.4
Sep:	186.4	125.2	.67	211.1	142.1	177.4	198.3	14	15.0
Oct:	219.0	145.5	.66	213.1	142.1	182.0	200.6	15	14.8
Nov:	196.1	131.4	.67	213.7	141.7	184.3	201.2	9	14.4
Dec:	208.0	129.7	.62	216.1	143.9	204.9	202.7	7	15.7
				YEAR = 1991					
Jan:	213.5	136.9	.64	220.5	147.6	229.4	205.5	8	17.4
Feb:	270.2	167.5	.62	221.5	147.6	243.0	206.3	10	18.4
Mar:	227.9	141.9	.62	220.7	146.6	230.0	205.9	27	19.1
Apr:	215.9	140.0	.65	220.7	146.5	198.8	206.8	17	20.0
May:	182.5	121.3	.66	219.6	145.5	190.3	207.1	18	21.7
Jun:	231.8	169.7	.73	218.9	145.2	206.8	207.4	44	23.0
Jul:	245.7	173.7	.71	219.5	146.3	212.0	207.7	27	23.6
Aug:	251.5	176.3	.70	218.3	146.5	210.3	206.8	30	24.7
Sep:	185.8	125.3	.67	214.2	144.7	180.6	203.9	20	25.0
Oct:	220.1	144.1	.65	208.4	141.6	201.3	199.7	31	24.3
Nov:	169.0	108.2	.64	202.2	137.9	172.0	195.4	33	24.1
Dec:	217.7	144.4	.66	193.7	131.6	223.9	188.9	15	23.0
				YEAR = 1992					
Jan:	217.9	149.3	.69	183.3	123.6	217.6	181.8	14	21.1
Feb:	238.2	159.6	.67	171.8	115.2	232.1	174.8	31	19.8
Mar:	160.5	106.9	.67	161.6	108.0	171.3	168.5	14	19.4
Apr:	144.0	99.8	.69	154.3	103.1	158.5	162.9	11	18.9
May:	106.3	73.8	.69	148.9	100.1	125.4	158.8	21	17.5
Jun:	104.7	65.2	.62	143.3	96.9	116.7	154.2	15	16.6
Jul:	121.4	85.7	.71	134.3	90.6	132.3	146.6	10	16.6
Aug:	99.5	64.5	.65	124.4	84.0	122.1	138.9	15	16.1
Sep:	93.8	63.9	.68	117.5	79.6*	116.8	133.7*	25	15.8*
Oct:	136.2	88.3	.65			130.8		15	
Nov:	124.3	92.0	.74			145.2		14	
Dec:	127.4	83.3	.65			139.1		13	
				YEAR = 1993					
Jan:	92.1	59.1	.64			121.0		17	
Feb:	126.1	90.5	.72			142.6		16	

Mar: 107.4 70.5* .66* 136.4 21*

* = Preliminary estimates, Unmarked = Final Values.

The lowest smoothed sunspot number for Cycle 21, RI = 12.3, occurred in September 1986. The sunspot maximum for this cycle (cycle 22) occurred in July 1989, with a peak smoothed sunspot number (RI) of 158.1.

Note: Prior to June 1991, the 10.7 cm solar radio flux measurements originated from the Algonquin Radio Observatory near Ottawa. From June 1991 onward, the flux has been (and will continue to be) measured from the Dominion Radio Astrophysical Observatory at Penticton, British Columbia, Canada.

DAILY VALUES OF SOLAR FLUX AT 2800 MHz (PENTICTON-DRAO) AT 2000 UT

Data Valid for March 1993

Data Courtesy of the National Research Council of Canada
Herzberg Institute of Astrophysics
Dominion Radio Astrophysical Observatory
Penticton, British Columbia
CANADA

Series D is the best estimate of absolute value and is obtained by using the multiplier 0.90 recommended by Commission V of URSI.

1993	Observed	Adj to 1 AU	
	Series C	Series C	Series D
1	132.0	129.6	116.6
2	143.5	141.0	126.9
3	151.1	148.6	133.7
4	166.5	163.8	147.4
5	165.2	162.5	146.3
6	166.6	164.0	147.6
7	153.2	150.9	135.8
8	146.4	144.3	129.9
9	142.6	140.6	126.5
10	148.7	146.7	132.0
11	149.9	148.0	133.2
12	160.6	158.7	142.8
13	141.5	139.9	125.9

14	135.7	134.2	120.8
15	131.1	129.7	116.7
16	121.7	120.5	108.4
17	123.6	122.4	110.2
18	127.3	126.2	113.6
19	134.5	133.4	120.1
20	128.0	127.0	114.3
21	130.6	129.7	116.7
22	127.5	126.6	113.9
23	120.8	120.1	108.1
24	115.0	114.4	103.0
25	116.5	116.0	104.4
26	116.9	116.4	104.8
27	122.9	122.4	110.2
28	126.2	125.8	113.2
29	128.7	128.3	115.5
30	129.0	128.7	115.8
31	125.1	124.9	112.4
Mean:	136.4	135.0	121.5

OUTSTANDING EVENTS - SOLAR RADIATION AT 2800 MHZ **

DATE	KEY	CLASS	START U.T.	MAXIMUM U.T.	DURATION	PEAK FLUX	MEAN FLUX
March			HOURS	HOURS	MINUTES		
02	Z 28	PRE Precursor	2040.1	2045.3	20.4	19.2	10
	3 28	PRE Precursor	2100.5	2112.9	20.8	44.4	20
	3 41	SER Group Compt [1]	2121.3	2131.8	14.0	133	62
	3	Compt [2]	2135.2	2138.1	10.7	169	80
	3	Compt [3]	2145.8	2149.3	21.9	192	66
	@ 29	PBI P.B.Increase	2208	2227	144.5	37.4	18
06	Z 4	S/F Simple II F	2019.5	2033.4	31.3	296	139
	3 29	PBI P.B.Increase	2051	2053	129	69.6	25
	3 4	S/F Simple II F A	2059.9	2101.5	5.4	19.2	6
	3 4	S/F Simple II F A	2116.9	2119.1	5.0	105.1	37
	@ 3	S Simple II A	2226.7	2228.0	2.7	27.0	6
11	4	S/F Simple II F	2154.0	2155.3	9.3	49.6	10
12	45	GB Great Burst	1736.6	1802.2	48.5	895	144

	45	GB	Great Burst	1832.3	1841.5	90	859	210
13	3	S	Simple II	1752.6	1754.0	4.7	17.0	3
15	4	S/F	Simple II F	2112.7	2124.1	29.6	374	132
17	22	GRF	Simple II GRF F	1754	1801	48.0	15.9	3
19	3	S	Simple II	1959.6	2001.0	2.5	11.5	3
20	3	S	Simple II	1657.1	1657.5	1.8	16.3	6
Z	28	PRE	Precursor	2141.8	2142.6	1.8	21.1	5
3	3	S	Simple II	2141.3	2145.1	6.0	14.8	6
@	29	PBI	P.B.Increase	2147.3	2147.6	20.2	5.6	2
	4	S/F	Simple II F	2336.8	2337.3	1.8	11.1	2
	4	S/F	Simple II F	0026.7	0027.6	1.6	27.8	6
22	3	S	Simple II	1623.0	1624.6	4.8	26.3	7
	3	S	Simple II	2106.4	2107.1	3.8	18.9	3
23	4	S/F	Simple II F	1901.9	1905.8	8.7	24.1	5
25	4	S/F	Simple II F	1800.1	1802.3	4.6	41.8	11
	8	S	Spike	1850.5	1851.1	1.0	14.8	8
	8	S	Spike	1855.6	1855.8	0.5	14.8	5
	8	S	Spike	1915.3	1915.9	0.8	22.2	9
	4	S/F	Simple II F	1918.4	1919.4	2.6	28.9	10
30	3	S	Simple II	2038.6	2039.1	2.5	32.2	7

SUMMARY OF AVERAGE SOLAR AND GEOPHYSICAL INDICES FOR MARCH 1993

(Based on SGDB data released by the S.T.D.)

10.7 cm Solar Radio Flux: 135.62
Sunspot Number: 107.19
Boulder A-Index: 16.97
Planetary A-Index: 21.10
Background X-Ray Flux (1-8A): B3.75

Proton Fluence at > 1 MeV: 7.2610e+06
Total (non-averaged) Fluence at > 1 MeV: 2.2509e+08
Proton Fluence at > 10 MeV: 1.0848e+05
Total (non-averaged) Fluence at > 10 MeV: 3.3630e+06

Average Daily Deviation of the Boulder Magnetometer: 32.58 nT

Short Wave Fadouts (SWFs):   0.39
Total Number of SWFs during Interval: 12
SWF Durations: 19.61 minutes
Total Duration of SWFs during Interval: 608 minutes

Average Daily X-Ray Flux: C1.26
Average Neutron Counts: -0.01%
Average Daily PCA: +0.02 dB

** End of Monthly Report **

Date: Mon, 26 Apr 1993 06:28:21 GMT
From: pa.dec.com!nntpd2.cxo.dec.com!nuts2u.enet.dec.com!little@decwrl.dec.com
Subject: no-code defense
To: info-hams@ucsd.edu

"system@garlic.sbs.com (Anthony S. Pelliccio)" writes:

>I really don't have a big problem with the no-code license, but I do
>have a problem with no-code licensees who scream for this and that
>without making the effort to upgrade.

Glad to hear that. I made the effort and I *still* think the code
requirement is a crock.

>It also depends on what area of the country you're in. I know out here,
>2m has become the CB of the ham bands. And hey, look at Britain where
>they won't allow their entry class licensees access to 144-146MHz
>because of "Congestion and poor operating practices.".

Right, and learning the code somehow instills good operating practices. I
guess those NALs the FCC has been handing out recently and the nonsense on
14.313 are examples of "good operating practices". Please provide one
single shred of proof that learning morse code improves operating
practices.

I suppose the no-code bashing that seems to emanate from your system is
another example of the "good operating practices" you're hoping to find?

73,
Todd
N9MWB

Date: 21 Apr 93 13:52:16 GMT
From: news-mail-gateway@ucsd.edu
Subject: Special Event Station K2BSA/4
To: info-hams@ucsd.edu

> We'll be operating K2BSA/4 at the Old North State Council Camporee this
> Saturday, May 1, on 20 and 40 m phone. We'll be running about 600 watts
> into an inverted vee up about 50 feet. Listen for us. You can QSL via N4GGD.

Did I say THIS Saturday. THIS Saturday I'll be in Dayton. But the May 1
date is correct. Its THAT Saturday!

steve - W3GRG
mosier@iris.uncg.edu   dit dit

Date: 26 Apr 93 16:45:18 GMT
From: telesoft!garym@uunet.uu.net
Subject: STS-55 Element Set (116.66)
To: info-hams@ucsd.edu

STS-55 successfully launched today, April 26, at 10:50 AM EDT (1450 UTC).
These are prelaunch predicted elements for a 14:50 UTC launch and since the
launch did take place on time, they should be good until we get have in
flight elements available. These elements originate at JSC and were
provided by Robert Kliman (Thanks Bob!).
--GaryM

[NOTICE: please note the change in the address for the elements mailing list
and archive server, we are now at elements-request@alsys.com and
listserv@alsys.com, telesoft.com will still work for now but please update
any aliases or address lists you may have. Thanks, GM]

STS-55
1 00055U   93116.66861589 .00120200 00000-0 36300-3 0   79
2 00055 28.4697 268.5815 0003812 314.2100 45.8202 15.90487610   22

Satellite: STS-55
Catalog number: 00055
Epoch time: 93116.66861589   =   (26 APR 93   16:02:48.41 UTC)
Element set: JSC-007
Inclination: 28.4697 deg
RA of node: 268.5815 deg   Space Shuttle Flight STS-55
Eccentricity: .0003812   Prelaunch Keplerian Elements
Arg of perigee: 314.2100 deg   Launch: 26 APR 93 14:50 UTC
Mean anomaly: 45.8202 deg

Mean motion: 15.90487610 rev/day   G. L. Carman
Decay rate: 1.2020e-03 rev/day*2   NASA Johnson Space Center
Epoch rev: 2

--
Gary Morris KK6YB   Internet: elements-request@alsys.com
San Diego, CA, USA   Phone: +1 619-457-2700
(for Shuttle Elements subscription info, email: listserv@alsys.com)

Date: 26 Apr 93 17:42:13 GMT
From: news-mail-gateway@ucsd.edu
Subject: STS-55 Launch & Elem. Set JSC-007
To: info-hams@ucsd.edu

SB SAREX@AMSAT $STS-55.005
STS-55 Launch & Elem. Set JSC-007

The Space Shuttle Columbia, with the German Sapeclab Payload on-board,
was launched from the Kennedy Space Center today at 14:50 UTC.

STS-55/SL-D2 will carry out materials and life sciences research for
Germany using the European designed spacelab hardware. Of particular
interest to radio amateurs is the inclusion of the SAREX (Shuttle Amateur
Radio Experiment) hardware on this mission. SAREX allows school groups and
amateur radio operators to talk to the Shuttle crew while they are on orbit.
STS-55 is expected to perform around-the-clock research over the planned
9 day mission.

A nominal 28.5 degree inclination orbit was achieved after the OMS-2 (Orbital
Maneuvering System) burn. Therefore, prelaunch element set JSC-007, generated
by Gil Carman, WA5NOM, is valid for flight day 1.

STS-55
1 00055U   93116.66861589 .00120200 00000-0 36300-3 0   79
2 00055 28.4697 268.5815 0003812 314.2100 45.8202 15.90487610   22

Satellite: STS-55
Catalog number: 00055
Epoch time: 93116.66861589   =   (26 APR 93   16:02:48.41 UTC)
Element set: JSC-007
Inclination: 28.4697 deg
RA of node: 268.5815 deg   Space Shuttle Flight STS-55
Eccentricity: .0003812   Prelaunch Keplerian Elements
Arg of perigee: 314.2100 deg   Launch: 26 APR 93 14:50 UTC
Mean anomaly: 45.8202 deg
Mean motion: 15.90487610 rev/day   G. L. Carman

Decay rate: 1.2020e-03 rev/day^2   NASA Johnson Space Center
Epoch rev: 2

Submitted by Frank H. Bauer, KA3HDO for the SAREX Working Group

/EX

End of Info-Hams Digest V93 #502
****